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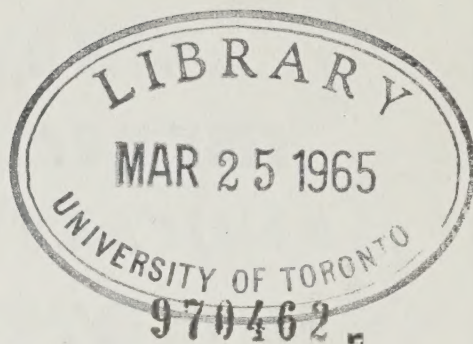
Canadian National
Railways. Research and
Development Department
What increased
manufacturing employment
means to community growth



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**WHAT
INCREASED
MANUFACTURING
EMPLOYMENT
MEANS
TO COMMUNITY
GROWTH**



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INTRODUCTION

When a new factory is built in or near a community it usually means additional jobs for members of that community. While the immediate beneficiaries include the new job holders, the effects of increased employment are likely to be felt in many facets of the community's economic life. New jobs mean more pay packets, and more pay packets mean a general stimulation of the economic tempo. For example, increased income resulting from new jobs can mean more marriages which, together with an influx of workers from outside the community, is likely to contribute to increases in population, households, and school enrollment. These developments may well lead to increased expenditures on home building, on food, clothing, automobiles, furniture, home appliances, on drug stores, recreation, and on other items related to consumer expenditure. In turn, increased demand in these areas tends to lead to further employment increases in areas not directly related to the industry where the original employment increase took place.

Such a chain reaction does not necessarily occur. Much depends on the characteristics of the community—the distribution of age groups within the population, the location of the community, the make-up of the labour force, and so on. Nevertheless, there is a tendency for new jobs to stimulate the community's economy. It is this tendency which has given rise to the present study. In these few pages, an endeavour has been made to measure the quantitative effects of increases in manufacturing employment in selected communities.

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CRITERIA FOR COMMUNITY SELECTION

There are problems in a study of this nature. ⁽¹⁾ Most of these are related to the question of whether or not increases in other sectors of the community's economy are actually the result of increases in manufacturing employment. In this regard, there is the difficulty of removing influences from outside the community. Also local influences, other than increases in manufacturing employment, may play a role.

Although such extraneous influences cannot be removed with precision, their role can be minimized by a careful selection of the communities which are to be studied. To this end an effort was made to exclude those communities which were in close proximity to other major communities or metropolitan areas. Also, the selection was restricted to communities which were not too large; larger metropolitan areas, because of their size, develop a more complex pattern of cross influences. On the other hand, the communities chosen had to be sufficiently large so that small irregular influences would not have a disproportionate effect on some of the sectors under consideration. Other criteria considered in the selection of the communities were as follows:

- (i) manufacturing employment⁽²⁾ should have shown a substantial increase between 1941 and 1951;
- (ii) manufacturing employment in 1951 should be a substantial proportion of total employment;
- (iii) a substantial proportion of the employment change between 1941 and 1951 should have occurred in manufacturing employment.

These latter criteria help to guard against attributing to an increase in manufacturing employment, a community growth not reasonably related thereto.

One of the problems connected with the study has been the fact that suitable up-to-date information has not been available. The

⁽¹⁾ Similar studies have been made elsewhere, notably by the Chamber of Commerce of the United States. We are indebted to the Chamber for the general approach adopted here.

⁽²⁾ Actual employment figures are not available by communities or industries for the years in question. For 1941 the "gainfully occupied" figure is used while for 1951 the comparable "labour force" figure is utilized. Were actual employment figures available, it appears unlikely that the trends noted would be substantially different.

1956 census included data on population, households and families, but did not include the necessary material on the labour force and distribution in retail and wholesale trade. This has meant that the study has had to be based on the years 1941 and 1951. Since 1941 was a war year and therefore not "normal", some distortions may stem from this fact.

The nature of economic development in Canada has led to difficulties in choosing communities which adhere to the minimum criteria. The concentration of secondary manufacturing industries in or near the large metropolitan centres of Central Canada has meant a very considerable narrowing of choice. Despite these limitations, it is felt that there is validity in the general pattern indicated by the study.

COMMUNITIES SELECTED

The communities selected are as follows:

Ontario	Quebec
Belleville	Granby
Chatham	Joliette
Cornwall	St. Jerome
Peterborough	
Stratford	
Woodstock	

It will be noted that these communities are all in Central Canada. While it would have been preferable to have all regions represented, this was not possible if the criteria, noted above, were to be adhered to. Although the communities selected cannot be considered as a national representative sample, one can assume that similar trends, while varying in magnitude, would be applicable to most communities in Canada.

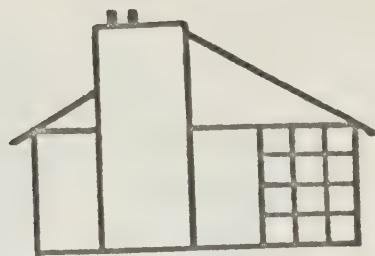
The principal changes in the various indicators are noted in the following pictograph and in Table 1. It is interesting to note that, whereas manufacturing employment increased by 100, employment, other than manufacturing, increased by 117; at the same time population increase was four times that of manufacturing employment. The annual change in retail sales (in volume terms) showed a substantial increase of almost one million dollars.

WHAT 100 ADDITIONAL MANUFACTURING



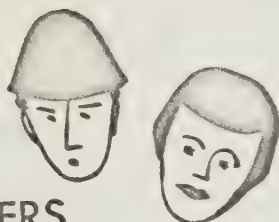
427 MORE
PEOPLE

131
MORE
HOUSEHOLDS



117
MORE
WORKERS

EMPLOYED
OTHER THAN
MANUFACTURING



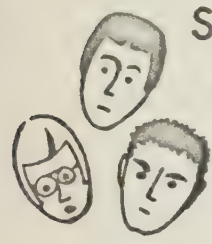
393 MORE
TELEPHONES



Employment Changes	No. of Workers
Manufacturing.....	+100
Agriculture and Other Primary.....	- 2
Construction.....	+ 16
Electricity, Gas, Water (Production and Supply).....	+ 5
Transport and Communications.....	+ 19
Wholesale Trade.....	+ 9
Retail Trade.....	+ 29
Finance and Insurance.....	+ 7
Services—Government.....	+ 8
Community.....	+ 22
Personal.....	—
Business.....	+ 3
Recreational.....	+ 2
Not Stated.....	- 1
TOTAL, All Industries.....	+217

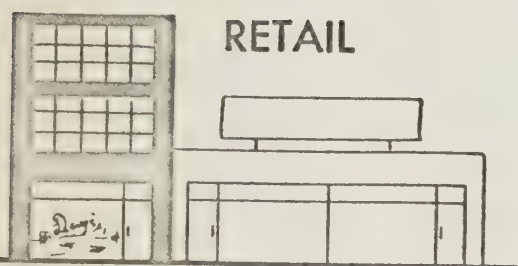
WORKERS MEANT TO THEIR COMMUNITY

66 MORE
SCHOOL
CHILDREN




187 MORE
MOTOR
VEHICLE
REGISTRATIONS

3 MORE
RETAIL
ESTABLISHMENTS



\$939,000
MORE
RETAIL
SALES
PER
YEAR



Increase in Annual Retail Sales (1951 Constant \$)	
Food and Beverage Stores (incl. Restaurants) ⁽¹⁾	263,000
General Merchandise Stores.....	55,000
Clothing Stores.....	93,000
Automotive Stores.....	345,000
Furniture and Appliance Stores.....	55,000
Building Material and Hardware Stores.....	70,000
All Other ⁽¹⁾	58,000
TOTAL.....	939,000

⁽¹⁾ 1941 and 1951 figures are not exactly comparable because of changes in classification.

TABLE I
MANUFACTURING EMPLOYMENT—1941 AND 1951

	Manufacturing Employment		Increase in Manufacturing Employment		Percent of Employed Persons in Manufacturing	
	<u>1941^a</u>	<u>1951^b</u>	<u>Number</u>	<u>%</u>	<u>1941</u>	<u>1951</u>
Ontario						
Belleville	1,615	2,497	882	54.6	28.0	29.7
Chatham	2,052	2,858	806	39.3	31.7	32.4
Cornwall	2,579	3,210	631	24.5	51.4	47.2
Peterborough	5,495	8,723	3,228	58.7	54.0	54.8
Stratford	2,636	3,450	814	30.9	43.1	45.7
Woodstock	2,564	3,311	747	29.1	51.1	47.3
Quebec						
Granby	3,414	5,110	1,696	49.7	61.2	58.5
Joliette	1,576	2,284	708	44.9	35.5	38.1
St. Jerome	2,524	3,701	1,177	46.6	60.3	54.4
9 Communities,						
Total	24,455	35,144	10,689	43.7	46.3	46.2
Canada,						
Total	969,515	1,360,662	391,147	40.3	23.1	25.7

Source: Census of Canada, 1941 and 1951.

^a Gainfully occupied by industry; excludes those on Active Service with the Armed Forces. See also Note (2) on page 4.

^b Labour Force, 14 years and over. See also Note (2) on page 4.

TABLE II
ECONOMIC CHANGE IN NINE COMMUNITIES

(1) Item No.	(2) Indicator	(3) 1941	(4) 1951	(5) Increase	(6) Increase per 100 Additional Manufacturing Employees
(1)	Population	140,320	185,975	45,655	427
(2)	Households	34,016	48,000	13,984	131
(3)	Employed Persons	52,786†	76,035‡	23,249	217
(4)	School Enroll- ment	23,460	30,563	7,103	66
(5)	Retail Sales (in Thousands of Dollars)	127,111*	227,387	100,276	939
(6)	Retail Estab- lishments	2,312	2,642	330	3
(7)	Motor Vehicle Registrations	25,932	45,886	19,954	187
(8)	Telephones	29,121	71,121	42,000	393

Source: Census of Canada, 1941 and 1951 for items 1-6; item 7 is from DBS, The Motor Vehicle, 1941 and 1951; item 8 is from The Business Year Book, 1942 and 1952 (Maclean-Hunter Publishing Co., Toronto).

† Gainfully occupied, excluding those on Active Service with the Armed Forces. See also note (2) on page 4.

‡ Labour Force, 14 years of age and over. See also note (2) on page 4.

* Adjusted to 1951 price levels.

In Table II retail sales for 1941 have been adjusted to reflect price changes which occurred during the 1941-1951 period. Thus, the increase shown in column 5 should be a fair approximation of volume change, irrespective of price movements. Some of the increase in retail trade between the two dates may be related to war conditions in the earlier year and, possibly, to changing patterns of consumer expenditure. Similar remarks would likely apply to motor vehicle registrations and to telephones. The actual influence of these factors, however, is difficult to assess. Although the resulting figures in column 6 for these categories might be somewhat lower if these influences were taken into consideration, it is unlikely that the trends would be significantly different.

Motor vehicle registrations include not only registrations of private automobiles, but also registrations for commercial vehicles, such as buses, trucks, taxis, etc. Telephones include business telephones as well as domestic telephones.

TABLE III
EMPLOYED PERSONS⁽¹⁾ BY INDUSTRY
NINE COMMUNITY TOTAL

	Employment in:		Amount of Change	Change per increase of 100 Manufacturing Employees
	1941 ⁽²⁾	1951 ⁽³⁾		
Manufacturing	24,455	35,144	10,689	100
Agriculture and Other				
Primary	774	574	- 200	- 2
Construction	2,823	4,518	1,695	16
Electricity, Gas, Water (Production & Supply)	522	1,062	540	5
Transportation and Communications	3,406	5,404	1,998	19
Wholesale Trade	1,145	2,133	988	9
Retail Trade	6,468	9,538	3,070	29
Finance and Insurance	1,130	1,888	758	7
Services—Government	1,874	2,682	808	8
Community	3,968	6,373	2,405	22
Personal	4,931	4,935	4	—
Business	348	696	348	3
Recreational	221	440	219	2
Not Stated	721	648	- 73	- 1
TOTAL EMPLOYMENT	52,786	76,035	23,249	217

Source: Census of Canada, 1941 and 1951.

(1) See note (2), page 4.

(2) Gainfully occupied by industry; excludes those on Active Service with the Armed Forces.

(3) Labour Force, 14 years of age and over, by industry.

In Table III, the figures for Government Services reflect those employed at all levels of government—federal, provincial and municipal. Those employed in community services include teachers, doctors, nurses, ministers of religion and those employed by welfare institutions. Business services include accountancy, law, engineering, labour and trade organizations.

TABLE IV
ESTIMATED ANNUAL RETAIL SALES PER 100 ADDITIONAL
MANUFACTURING EMPLOYEES

	Increase in Sales
Food and Beverage Stores (including Restaurants) ⁽¹⁾	\$263,000
General Merchandise Stores	55,000
Clothing Stores	93,000
Automotive Stores	345,000
Furniture and Appliance Stores	55,000
Building Material and Hardware Stores	70,000
All Other	58,000
TOTAL	\$939,000

Source: Census of Canada, 1941 and 1951.

⁽¹⁾ 1941 and 1951 figures are not exactly comparable because of changes in classification.

In Table IV the increase in retail sales should approximate the increase in volume terms between 1941 and 1951. Between these two dates the overall consumer price level increased by approximately 60 per cent. As a result, the 1941 figures were inflated by this percentage. An exception is the food and beverage group; since food prices doubled during this period, the 1941 figures were inflated by 100 per cent.

COMMENTS

The heart of this study is to be found in the pictograph and table on pages 6 and 7. The subsequent tables deal with components of the figures appearing on those pages as well as the criteria upon which the study is based. What we have tried to do is to show in quantitative terms the developments which have occurred in the nine selected communities. While we do not claim a direct causality between increased manufacturing employment and increases in the other sectors, still the evidence suggests that a definite relationship is present.

We would explicitly point out the hazards of using the forecasts developed in this study for communities which do not meet the criteria shown on page 4. The interpretation, as applied in those communities, must serve only as guidance in industrial planning, and failure to recognize this proviso can only lead to errors of judgment.

This study has made no attempt to assess the social factors associated with industrial development. While new jobs lead to higher standards of living, as measured by per capita income, industrial development inevitably brings in its train a series of by-products not all of which are beneficial. Noise, pollution, and the social problems of growing communities are beyond the scope of this study. Suffice it to say that industrial development opens up new opportunities—and new challenges.

The Canadian National Railways maintains an organization to assist industry in developing these opportunities and to cooperate in the study of appropriate plant sites. Officers of this organization are to be found at Moncton, Quebec City, Montreal, Toronto, Winnipeg, Edmonton and Vancouver.

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Canadian National Railways.
Research and Development
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What increased manufacturing
employment means to community
growth

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